

Step-by-Step Guide to Open-E DSS V7 Active-Passive iSCSI Failover

Software Version: DSS ver. 7.00 up02

Presentation updated: November 2012

TO SET UP ACTIVE-PASSIVE iSCSI FAILOVER, PERFORM THE FOLLOWING STEPS:

1. Hardware configuration:
2. Network Configuration
 - Set server hostnames and ethernet ports on both nodes (node-a, node-b)
3. Configure the node-b:
 - Create a Volume Group, iSCSI Volume
 - Configure Volume Replication mode (destination and source mode) – define remote mode of binding , create Volume Replication task and start the replication task
4. Configure the node-a
 - Create a Volume Group, iSCSI Volume
 - Configure Volume Replication mode (source and destination mode), create Volume Replication task and start the replication task.
5. Create targets (node-a and node-b)
6. Configure Failover (node-a and node-b)
7. Start Failover Service
8. Test Failover Function
9. Run Failback Function

Open-E DSS V7 Active-Passive iSCSI Failover

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Storage client

IP:192.168.0.101 eth0

IP:192.168.20.101 eth1 (MPIO)

IP:192.168.21.101 eth2 (MPIO)

Data Server (DSS1)

node-a

IP Address:192.168.0.220

RAID System 1

Port used for WEB GUI management

IP:192.168.0.220

Storage Client Access, Multipath
Auxiliary connection (Heartbeat)

IP:192.168.1.220

Storage Client Access, Multipath
Auxiliary connection (Heartbeat)

IP:192.168.2.220

Volume Replication,
Auxiliary connection (Heartbeat)

IP:192.168.3.220

Volume Groups (vg00)

iSCSI volumes (lv0000)

iSCSI targets

PING NODES:

IP Addresses:
192.168.1.107

192.168.2.107

1. Hardware Configuration

Data Server (DSS2)

node-b

IP Address:192.168.0.221

RAID System 2

Port used for WEB GUI management

IP:192.168.0.221

Storage Client Access, Multipath
Auxiliary connection (Heartbeat)

IP:192.168.1.221

Storage Client Access, Multipath
Auxiliary connection (Heartbeat)

IP:192.168.2.221

Volume Replication,
Auxiliary connection (Heartbeat)

IP:192.168.3.221

Volume Groups (vg00)

iSCSI volumes (lv0000)

iSCSI targets

Note:

It is strongly recommended to use direct point-to-point and if possible 10Gb connection for the volume replication. Optionally Round-Robin-Bonding with 1Gb or 10Gb ports can be configured for the volume replication. The volume replication connection can work over the switch, but the most reliable is a direct connection.

iSCSI Failover/Volume Replication (eth3)

NOTE:

For additional layer of redundancy, you may add an extra connection between switches and ping nodes.

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Data Server (DSS2)

node-b

IP Address:192.168.0.221

1. Hardware Configuration

After logging on to the Open-E DSS V7 (node-b), please go to **SETUP** and choose the „**Network interfaces**” option.

In the **Hostname** box, replace the "dss" letters in front of the numbers with „node-b” server, in this example „**node-b-59979144**” and click the **apply** button (this will require a reboot).

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SETUP | CONFIGURATION | MAINTENANCE | STATUS | HELP

You are here: Setup > Network interfaces

Interfaces

- eth0
- eth1
- eth2
- eth3

Server name

Server name: dss2

Comment: Data Storage Software

apply

Hostname

Hostname: node-b-59979144

apply

Please apply changes or press "reload" button to discard

DNS settings

DNS: 194.204.152.34;194.204.159.1

apply

Event Viewer

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Data Server (DSS2)

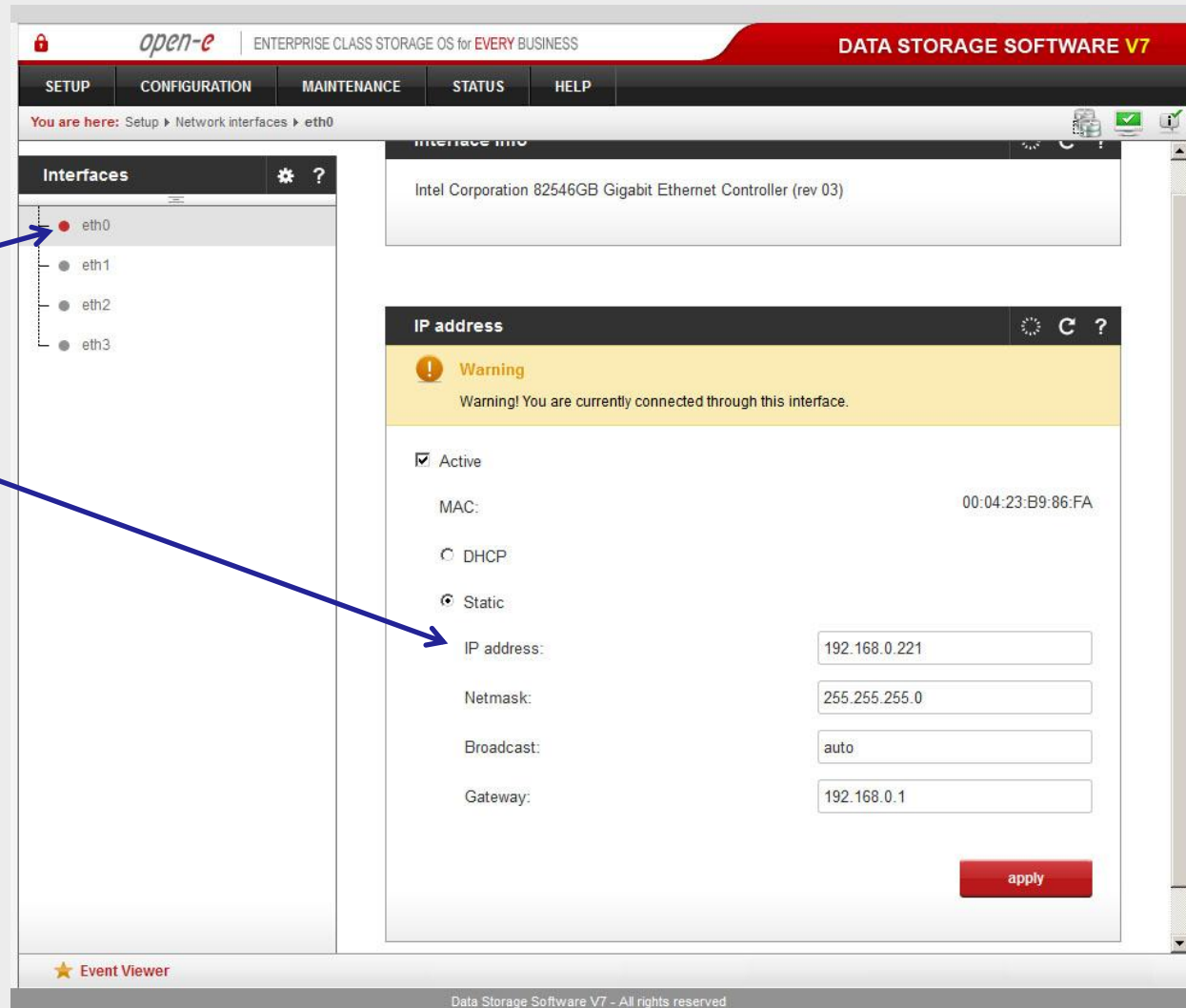
node-b

IP Address:192.168.0.221

1. Hardware Configuration

Next, select **eth0** interface and in the **IP address** field, change the IP address from 192.168.0.220 to 192.168.0.221

Then click **apply** (this will restart network configuration).



The screenshot shows the Open-E DSS V7 web interface. The top navigation bar includes 'SETUP', 'CONFIGURATION', 'MAINTENANCE', 'STATUS', and 'HELP'. The breadcrumb trail indicates 'You are here: Setup > Network interfaces > eth0'. On the left, the 'Interfaces' panel lists 'eth0', 'eth1', 'eth2', and 'eth3', with 'eth0' selected. The main panel displays the configuration for 'eth0', including the hardware description 'Intel Corporation 82546GB Gigabit Ethernet Controller (rev 03)'. A warning message states: 'Warning! You are currently connected through this interface.' The configuration options are: 'Active' (checked), 'MAC' (00:04:23:B9:86:FA), 'DHCP' (unchecked), and 'Static' (checked). The 'IP address' field is set to '192.168.0.221', 'Netmask' is '255.255.255.0', 'Broadcast' is 'auto', and 'Gateway' is '192.168.0.1'. An 'apply' button is located at the bottom right of the configuration panel. The footer shows 'Event Viewer' and 'Data Storage Software V7 - All rights reserved'.



Data Server (DSS2)

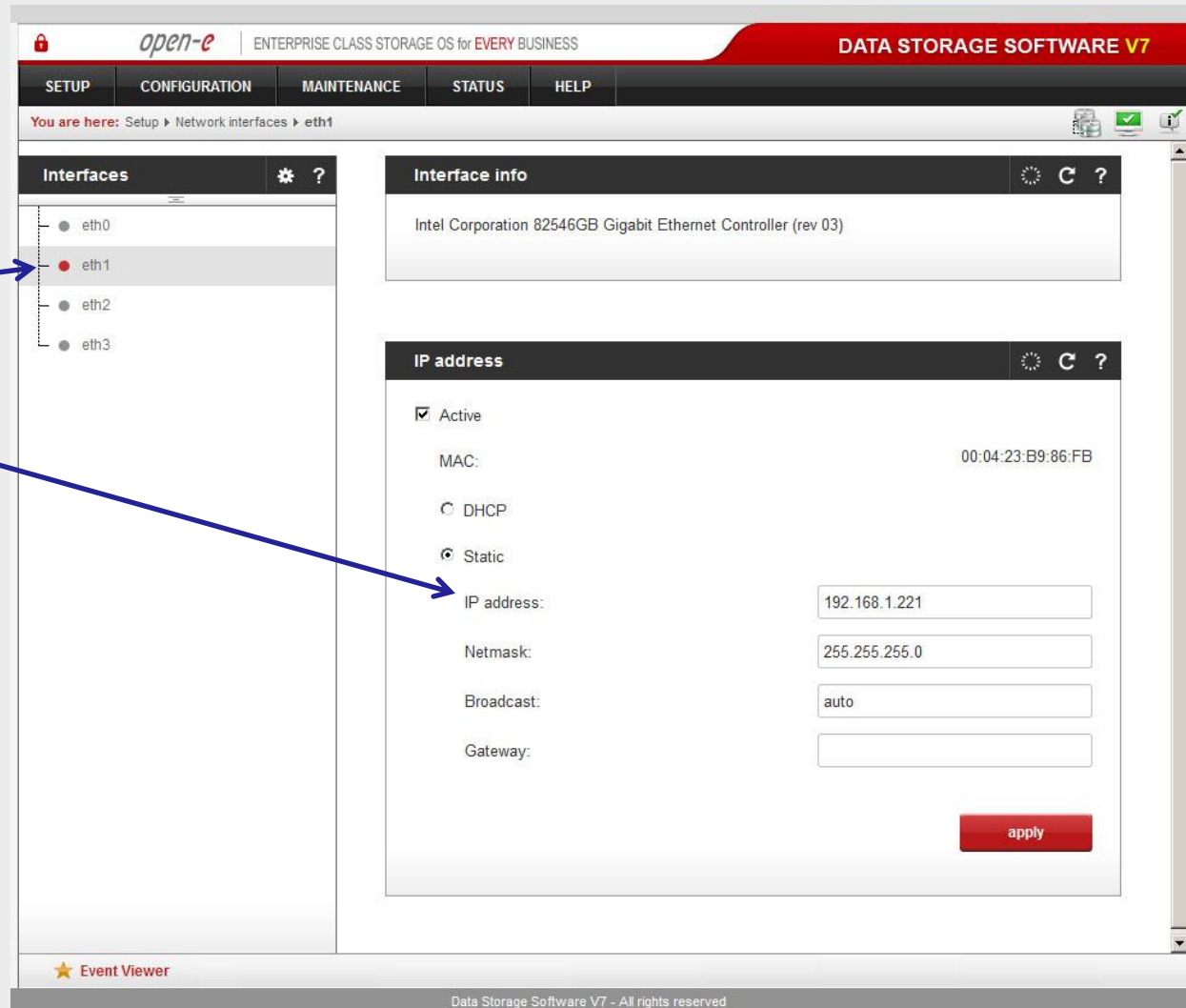
node-b

IP Address:192.168.0.221

1. Hardware Configuration

Afterwards, select **eth1** interface and change the IP address from 192.168.1.220 to 192.168.1.221 in the field **IP address** and click the **apply** button.

Next, change the IP addresses in **eth2** and **eth3** interfaces accordingly.



The screenshot shows the Open-E DSS V7 web interface. The top navigation bar includes tabs for SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. The current page is 'Setup > Network interfaces > eth1'. On the left, a list of interfaces (eth0, eth1, eth2, eth3) is shown, with eth1 selected. The main area displays the configuration for eth1. The 'Interface info' section shows 'Intel Corporation 82546GB Gigabit Ethernet Controller (rev 03)'. The 'IP address' section shows the interface is 'Active' with a MAC address of '00:04:23:B9:86:FB'. The 'Static' option is selected for the IP configuration. The 'IP address' field is set to '192.168.1.221', the 'Netmask' is '255.255.255.0', and the 'Broadcast' is 'auto'. The 'Gateway' field is empty. An 'apply' button is at the bottom right of the configuration area. The footer includes 'Event Viewer' and 'Data Storage Software V7 - All rights reserved'.

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Data Server (DSS1)

node-a

IP Address:192.168.0.220

1. Hardware Configuration

After logging in to node-a, please go to **SETUP** and choose the „**Network interfaces**” option. In the **Hostname** box, replace the "dss" letters in front of the numbers with „node-a” server, in this example „**node-a-39166501**” and click **apply** (this will require a reboot).

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SETUP | CONFIGURATION | MAINTENANCE | STATUS | HELP

You are here: Setup > Network interfaces

Interfaces [gear] [?]

- eth0
- eth1
- eth2
- eth3

Server name [refresh] [C] [?]

Server name: dss1

Comment: Data Storage Software

apply

Hostname [refresh] [C] [?]

Hostname: node-a-39166501

apply

Please apply changes or press "reload" button to discard

DNS settings [refresh] [C] [?]

DNS: 194.204.152.34;194.204.159.1

apply

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Data Server (DSS2)

node-b

IP Address:192.168.0.221

2. Configure the node-b

Under **CONFIGURATION**, select „Volume manager”, then click on „Volume groups”.

In the **Unit manager** function menu, add the selected physical units (**Unit MD0** or other) to create a new volume group (in this case, **vg00**) and click the **apply** button.

The screenshot shows the Open-E DSS V7 web interface. The top navigation bar includes tabs for SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. The breadcrumb trail indicates the current location: Configuration > Volume manager > Volume groups.

The left sidebar contains a tree view with the following items:

- Vol. groups (selected)
- Unit rescan
- Unit manager
- Vol. replication

The main content area displays the 'Unit manager' section. It features a table with the following data:

Unit	Size (GB)	Serial number	Status
Unit MD0	298.10	N/A	available

Below the table, there is an 'Action:' dropdown menu set to 'new volume group' and a 'Name:' input field containing 'vg00'. An 'apply' button is located at the bottom right of this section.

At the bottom of the interface, there is a 'Drive identifier' section with a table showing the status of physical drives:

Unit	Serial number	Status
Unit S000	9RA6VDG3	
Unit S001	9SY0QWBT	

The footer of the interface includes an 'Event Viewer' icon and the text 'Data Storage Software V7 - All rights reserved'.



Data Server (DSS2)

node-b

IP Address:192.168.0.221

2. Configure the node-b

Select the appropriate volume group (**vg00**) from the list on the left and create a **new iSCSI volume** of the required size. The logical volume (**lv0000**) will be the destination of the replication process on node-b.

Next, check the box **Use volume replication**.

After assigning an appropriate amount of space for the iSCSI volume, click the **apply** button.

The screenshot shows the Open-E DSS V7 web interface. The top navigation bar includes tabs for SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. The breadcrumb trail indicates the current location: Configuration > Volume manager > Volume groups > vg00. The left sidebar shows a list of volume groups with 'vg00' selected. The main content area is divided into two panels. The left panel, titled 'Vol. groups', shows 'vg00' with a red dot indicating it is selected. The right panel, titled 'Volume manager', shows a table of system volumes and a form for creating a new iSCSI volume. The table lists 'SWAP' (4.00 GB), 'Reserved for snapshots' (0.00 GB), 'Reserved for system' (4.00 GB), 'Reserved for replication' (0.00 GB), and 'Free' (290.06 GB). The form includes a dropdown for 'Action' set to 'new iSCSI volume', a dropdown for 'Options' set to 'Just create volume', a checkbox for 'Use volume replication' which is checked, a radio button for 'File I/O' and a checked checkbox for 'Block I/O', a 'Rate' dropdown set to 'medium', and a slider for 'add' space set to 50 GB. The 'apply' button is at the bottom right of the form.

System volumes	Size (GB)
SWAP	4.00
Reserved for snapshots	0.00
Reserved for system	4.00
Reserved for replication	0.00
Free	290.06

Action: new iSCSI volume

Options: Just create volume

☒ Use volume replication

☐ File I/O

☒ Initialize

Rate: medium

Block I/O

add: 50 GB (+0.12 GB for replication)

apply

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Data Server (DSS2)

node-b

IP Address:192.168.0.221

2. Configure the node-b

Logical iSCSI Volume Block I/O is now configured.



iSCSI volume (lv0000)

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SETUP | CONFIGURATION | MAINTENANCE | STATUS | HELP

You are here: Configuration > Volume manager > Volume groups > vg00

Vol. groups

- vg00

Vol. replication

Volume manager

Info
Logical volume lv0000 has been created successfully.

Logical Volume	Type	Snap.	Rep.	Init.	Blocksize (bytes)	Size (GB)
lv0000	iSCSI		✓		N/A	50.00

System volumes

	Size (GB)
SWAP	4.00
Reserved for snapshots	0.00
Reserved for system	4.00
Reserved for replication	0.13
Free	239.94

Action: new NAS volume

☐ Use volume replication

☐ WORM

0 < > add: 0.00 GB 239.94

apply

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Data Server (DSS1)

node-a

IP Address:192.168.0.220

3. Configure the node-a

Next, go to the node-a system.
Under **CONFIGURATION**, select
„Volume manager” and then click
on „Volume groups”.

Add the selected physical units
(Unit S001 or other) to create a
new volume group (in this case,
vg00) and click **apply** button.



Volume Groups (vg00)

The screenshot shows the Open-E DSS V7 web interface. The top navigation bar includes links for SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. The breadcrumb trail indicates the current location: Configuration > Volume manager > Volume groups.

The main content area is divided into several sections:

- Vol. groups:** A section for managing volume groups, currently empty.
- Unit rescan:** A section with a "rescan" button.
- Unit manager:** A table listing available units for selection.
- Vol. replication:** A section for managing volume replication, currently empty.
- Drive identifier:** A table listing physical drives.

The **Unit manager** table is as follows:

Unit	Size (GB)	Serial number	Status
<input checked="" type="checkbox"/> Unit S001	465.70	N/A	available

Below the table, the "Action" dropdown is set to "new volume group" and the "Name" field contains "vg00". An "apply" button is visible at the bottom of this section.

The **Drive identifier** table is as follows:

Unit	Serial number	Status
<input type="checkbox"/> Unit S001	N/A	

At the bottom of the interface, there is an "Event Viewer" icon and a footer note: "Data Storage Software V7 - All rights reserved".

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Data Server (DSS1)

node-a

IP Address:192.168.0.220

3. Configure the node-a

Select the appropriate volume group (**vg00**) from the list on the left and create a **new iSCSI volume** of the required size. The logical volume (**lv0000**) will be a source of the replication process on the node-a.

Next , check the box for „**Use volume replication**”

After assigning an appropriate amount of space for the iSCSI volume, click the **apply** button

NOTE:

The source and destination volumes must be of identical size.

The screenshot shows the Open-E DSS V7 web interface. The top navigation bar includes links for SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. The breadcrumb trail indicates the current location: Configuration > Volume manager > Volume groups > vg00.

On the left, the 'Vol. groups' section shows a list with 'vg00' selected. Below it, the 'Vol. replication' section has a checkbox for 'Use volume replication' which is checked.

On the right, the 'Volume manager' section displays a table of system volumes:

System volumes	Size (GB)
SWAP	4.00
Reserved for snapshots	0.00
Reserved for system	4.00
Reserved for replication	0.00
Free	457.66

Below the table, the 'Action' dropdown is set to 'new iSCSI volume' and the 'Options' dropdown is set to 'Just create volume'. The 'Use volume replication' checkbox is checked. Under 'File I/O', the 'Initialize' checkbox is checked. Under 'Block I/O', the 'Rate' is set to 'medium'. A slider for volume size is shown, with a value of 50 GB entered in the 'add' field. The total available space is 457.66 GB, with 0.12 GB reserved for replication.

At the bottom right, there is a red 'apply' button. A blue text prompt at the bottom right says 'Please apply changes or press "reload" button to discard'.

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Data Server (DSS1)

node-a

IP Address:192.168.0.220

3. Configure the node-a

Logical iSCSI Volume Block I/O is now configured.



iSCSI volume (lv0000)

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SETUP | CONFIGURATION | MAINTENANCE | STATUS | HELP

You are here: Configuration > Volume manager > Volume groups > vg00

Vol. groups

- vg00

Vol. replication

Volume manager

Info

Logical volume lv0000 has been created successfully.

Logical Volume	Type	Snap.	Rep.	Init.	Blocksize (bytes)	Size (GB)
lv0000	iSCSI		✓		N/A	50.00

System volumes

System volumes	Size (GB)
SWAP	4.00
Reserved for snapshots	0.00
Reserved for system	4.00
Reserved for replication	0.13
Free	407.53

Action: new NAS volume

☐ Use volume replication

☐ WORM

0 407.53

< > add: 0.00 GB

apply

★ Event Viewer

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Data Server (DSS2)

node-b

IP Address:192.168.0.221

2. Configure the node-b

Now, on the node-b, go to „**Volume replication**”. Within **Volume replication mode** function, check the **Destination** box for lv0000. Then, click the **apply** button.

In the **Hosts binding** function, enter the IP address of node-a (in our example, this would be 192.168.3.220), enter node-a administrator password and click the **apply** button. After applying all the changes, the status should be: *Reachable*.

The screenshot shows the Open-E DSS V7 web interface. The top navigation bar includes links for SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. The breadcrumb trail indicates the current location: Configuration > Volume manager > Volume replication.

The interface is divided into several sections:

- Vol. groups:** A table showing the volume group 'vg00'.
- Volume replication mode:** A table with columns: Logical Volume, Init, Source, Destination, and Clear metadata. The row for 'lv0000' shows 'Init' as 'done', 'Source' as an unchecked checkbox, and 'Destination' as a checked checkbox. An 'apply' button is present at the bottom right of this section.
- Hosts binding:** A section for defining a remote node. It includes input fields for 'Remote node IP address' (set to 192.168.3.220) and 'Remote node GUI (administrator) password' (masked with dots). A 'connect' button is at the bottom right.
- Create new volume replication task:** A section with an 'Info' icon and a message: 'Volume replication tasks can not be created because there is no remote node connected.'

At the bottom of the interface, there is an 'Event Viewer' icon and a footer that reads 'Data Storage Software V7 - All rights reserved'.

NOTE:

The Mirror server IP Address must be on the same subnet in order for the replication to communicate. VPN connections can work providing you are not using a NAT. Please follow example:

- Source: 192.168.3.220
- Destination: 192.168.3.221




Data Server (DSS1)

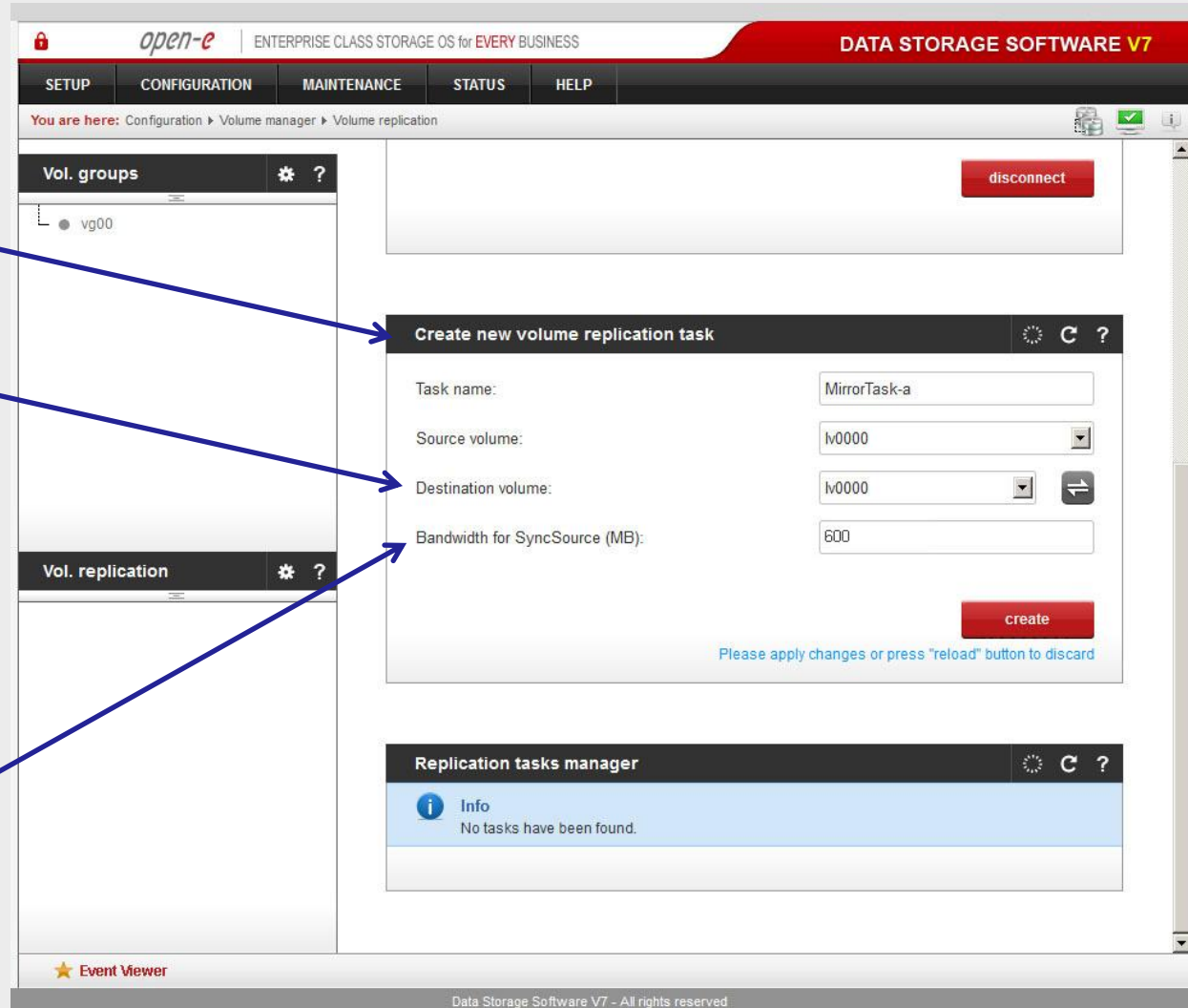
node-a

IP Address:192.168.0.220

3. Configure the node-a

In the **Create new volume replication task**, enter the task name in the **Task name** field, then click on the  button. In the **Destination volume** field, select the appropriate volume (in this example, **lv0000**).

In case of a 10GbE connection it is recommended to set for the replication a higher **Bandwidth for SyncSource (MB)**. To achieve better performance you can set 500MB. In the example, maximum 600MB is used. Next, click the **create** button.



The screenshot shows the Open-E DSS V7 web interface. The top navigation bar includes 'SETUP', 'CONFIGURATION', 'MAINTENANCE', 'STATUS', and 'HELP'. The breadcrumb trail indicates 'You are here: Configuration > Volume manager > Volume replication'. The left sidebar shows 'Vol. groups' with 'vg00' and 'Vol. replication'. The main content area displays the 'Create new volume replication task' form. The form fields are: 'Task name' (MirrorTask-a), 'Source volume' (lv0000), 'Destination volume' (lv0000), and 'Bandwidth for SyncSource (MB)' (600). A 'create' button is at the bottom right of the form. Below the form is a 'Replication tasks manager' section showing 'No tasks have been found.' Blue arrows point from the text boxes to the 'arrow' button, the 'Destination volume' dropdown, and the 'create' button.



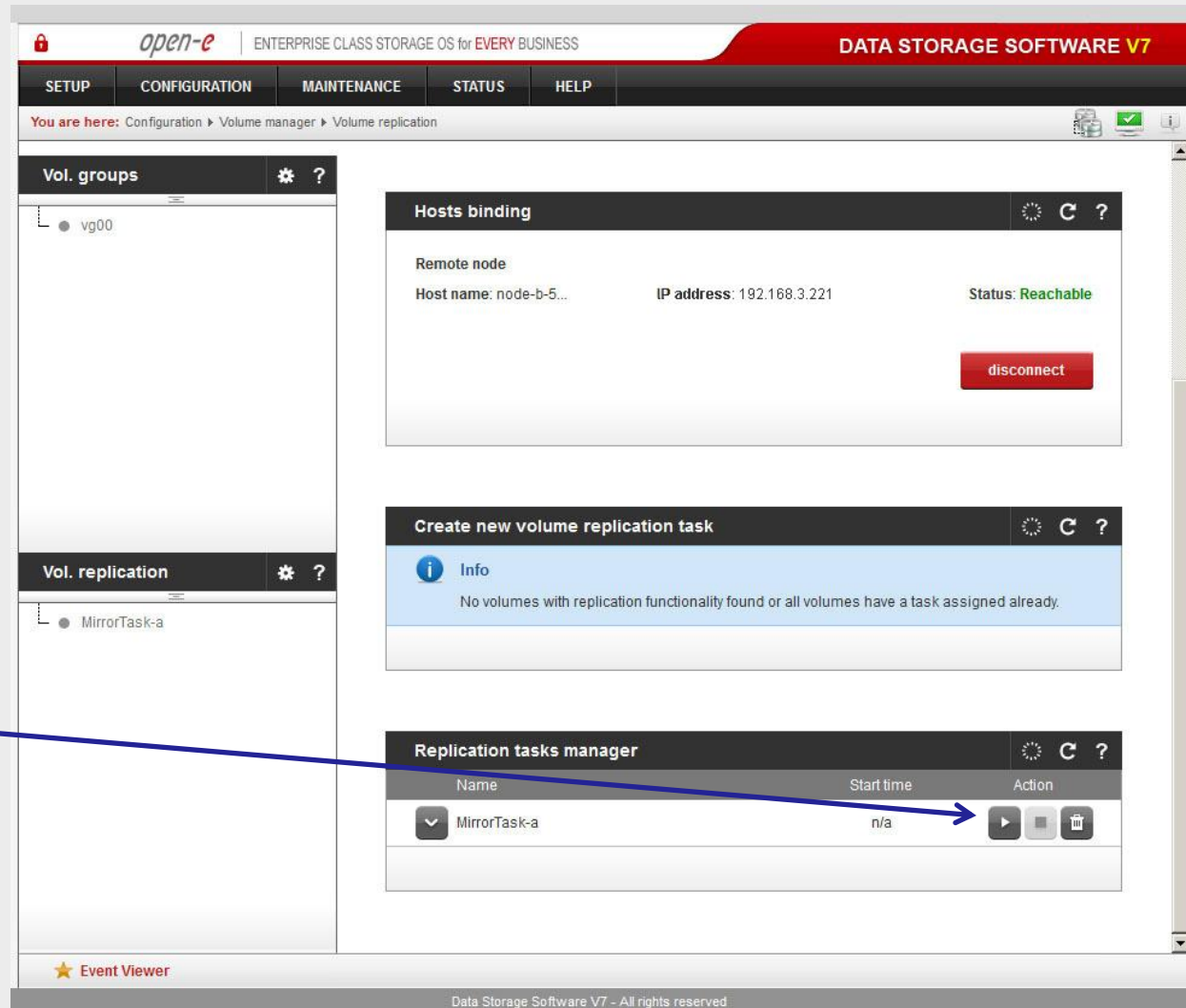
Data Server (DSS1)

node-a




IP Address:192.168.0.220

3. Configure the node-a

Now, in the **Replication task manager** function, click the corresponding „play” button to start the Replication task on the node-a.



The screenshot displays the Open-E DSS V7 web interface. The top navigation bar includes tabs for SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. The breadcrumb trail indicates the current location: Configuration > Volume manager > Volume replication. The left sidebar shows a tree view with 'Vol. groups' (containing 'vg00') and 'Vol. replication' (containing 'MirrorTask-a'). The main content area is divided into three sections: 'Hosts binding' (showing a remote node 'node-b-5...' with IP '192.168.3.221' and status 'Reachable'), 'Create new volume replication task' (with an info message), and 'Replication tasks manager'. The 'Replication tasks manager' table lists the task 'MirrorTask-a' with a start time of 'n/a' and a 'play' button. A blue arrow points from the text box to this button. The footer includes an 'Event Viewer' link and the copyright notice 'Data Storage Software V7 - All rights reserved'.

Name	Start time	Action
MirrorTask-a	n/a	  

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Data Server (DSS1)

node-a

IP Address:192.168.0.220

3. Configure the node-a

In the **Replication tasks manager** function, information is available on currently running replication tasks. When a task is started, a date and time will appear.

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SETUP | CONFIGURATION | MAINTENANCE | STATUS | HELP

You are here: Configuration > Volume manager > Volume replication

Vol. groups

- vg00

Vol. replication

- MirrorTask-a

Remote node

Host name: node-b-5... IP address: 192.168.3.221 Status: **Reachable**

disconnect

Create new volume replication task

Info

No volumes with replication functionality found or all volumes have a task assigned already.

Replication tasks manager

Name	Start time	Action
MirrorTask-a	2012-11-04 20:30:29	

Source volume: lv0000
Destination volume: lv0000
Destination IP: 192.168.3.221
Protocol type: Synchronous

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Data Server (DSS1)

node-a

IP Address:192.168.0.220

3. Configure the node-a

You can check the status of Volume Replication anytime in **STATUS** -> „Tasks” -> „Volume Replication” menu.

Click on the  button, located next to a task name (in this case **MirrorTask-a**) to display detailed information on the current replication task.

The screenshot shows the Open-E DSS V7 web interface. The top navigation bar includes SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. The current page is 'Status > Tasks > Volume Replication'. On the left, a 'Tasks' sidebar lists Data (File) Replication, Antivirus, Volume Replication (selected), and Snapshots. The main area displays 'Running tasks' for 'MirrorTask-a', showing it is a 'Volume replication' task started on '2012-11-04 20:30:29'. Below this, 'Source info' and 'Destination info' both show 'Logical volume: lv0000' and 'Consistency: Consistent'. The 'IP address' is '192.168.3.221'. At the bottom, a 'Tasks log' table shows a single entry for 'MirrorTask-a' with status 'OK' and action 'Started'.

Name	Type	Start time
MirrorTask-a	Volume replication	2012-11-04 20:30:29

Source info:	
Logical volume:	lv0000
Consistency:	Consistent
Destination info:	
Logical volume:	lv0000
Consistency:	Consistent
IP address:	192.168.3.221

Time	Name	Type	Status	Action
2012-11-04 20:30:36	MirrorTask-a	Volume replication	OK	Started

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NOTE:

Please allow the replication task to complete (similar to above with status being „Consistent”) before writing to the iSCSI Logical Volume.

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Data Server (DSS2)

node-b

IP Address:192.168.0.221

4. Create new target on the node-b

Choose **CONFIGURATION**, „iSCSI target manager” and „Targets” from the top menu.

In the „Create new target” function, uncheck the box **Target Default Name**.
In the **Name** field, enter a name for the new target and click **apply** to confirm.

iSCSI targets



The screenshot shows the Open-E DSS V7 web interface. The top navigation bar includes 'SETUP', 'CONFIGURATION', 'MAINTENANCE', 'STATUS', and 'HELP'. The breadcrumb trail indicates the current location: 'You are here: Configuration > iSCSI target manager > Targets'. The main content area is divided into two panels. The left panel, titled 'Targets', is currently empty. The right panel, titled 'Create new target', contains a form with the following fields: 'Target Default Name' (unchecked), 'Name' (filled with 'iqn.2012-11:mirror-0'), and 'Alias' (filled with 'target0'). A red 'apply' button is at the bottom right of the form. Below the form is a section titled 'Discovery CHAP user access' with two radio button options: 'No discovery CHAP user access authentication' (selected) and 'Enable discovery CHAP user access authentication'. A red 'apply' button is also present at the bottom right of this section. The footer of the interface includes 'Event Viewer' and 'Data Storage Software V7 - All rights reserved'.

NOTE:

Both systems must have the same Target name.



Data Server (DSS2)

node-b

IP Address:192.168.0.221

4. Create new target on the node-b

After that, select **target0** within the **Targets** field.

To assign appropriate volume to the target (iqn.2012-11:mirror-0 -> lv0000) and click the **+** button located under **Action**.

The screenshot shows the Open-E DSS V7 web interface. The top navigation bar includes links for SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. The breadcrumb trail indicates the current location: Configuration > iSCSI target manager > Targets > iqn.2012-11:mirror-0 (target0).

The main content area is divided into two panels. The left panel, titled "Targets", shows a list of targets with "target0" selected. The right panel, titled "Target volume manager", displays information about the selected target. It includes three informational sections:

- Info:** Currently there are no LUN's added to this target. In order to add a LUN, click on the plus "+" sign in the "Action" column for this LUN.
- Info:** There are logical volumes selected as mirror destination. There is no direct access to mirror destination volume. In order to access such volume, you can stop mirror task and switch destination mode to source mode or create a snapshot on the destination volume and assign the snapshot to a new target.
- Info:** Please note that in order to access iSCSI-enabled data from an initiator, the target needs to have a LUN 0, otherwise the data in all other LUNs will be inaccessible. The data will also be inaccessible if you select an inactive snapshot or a destination volume (volume replication) as LUN 0.

Below the information sections is a table with columns: Volume, Type, SCSI ID, LUN, Access mode, and Action. The table contains one row with the following data:

Volume	Type	SCSI ID	LUN	Access mode	Action
lv0000	iscsi	cWMfUSPA603m1nzB	0	write-through	+ -

An arrow points from the blue box text to the "+" button in the Action column. Below the table is a section for "CHAP user access authentication" with two radio buttons: "No CHAP user access authentication" (selected) and "Enable CHAP user access authentication".

The bottom of the interface features an "Event Viewer" icon and a footer stating "Data Storage Software V7 - All rights reserved".



Data Server (DSS1)

node-a

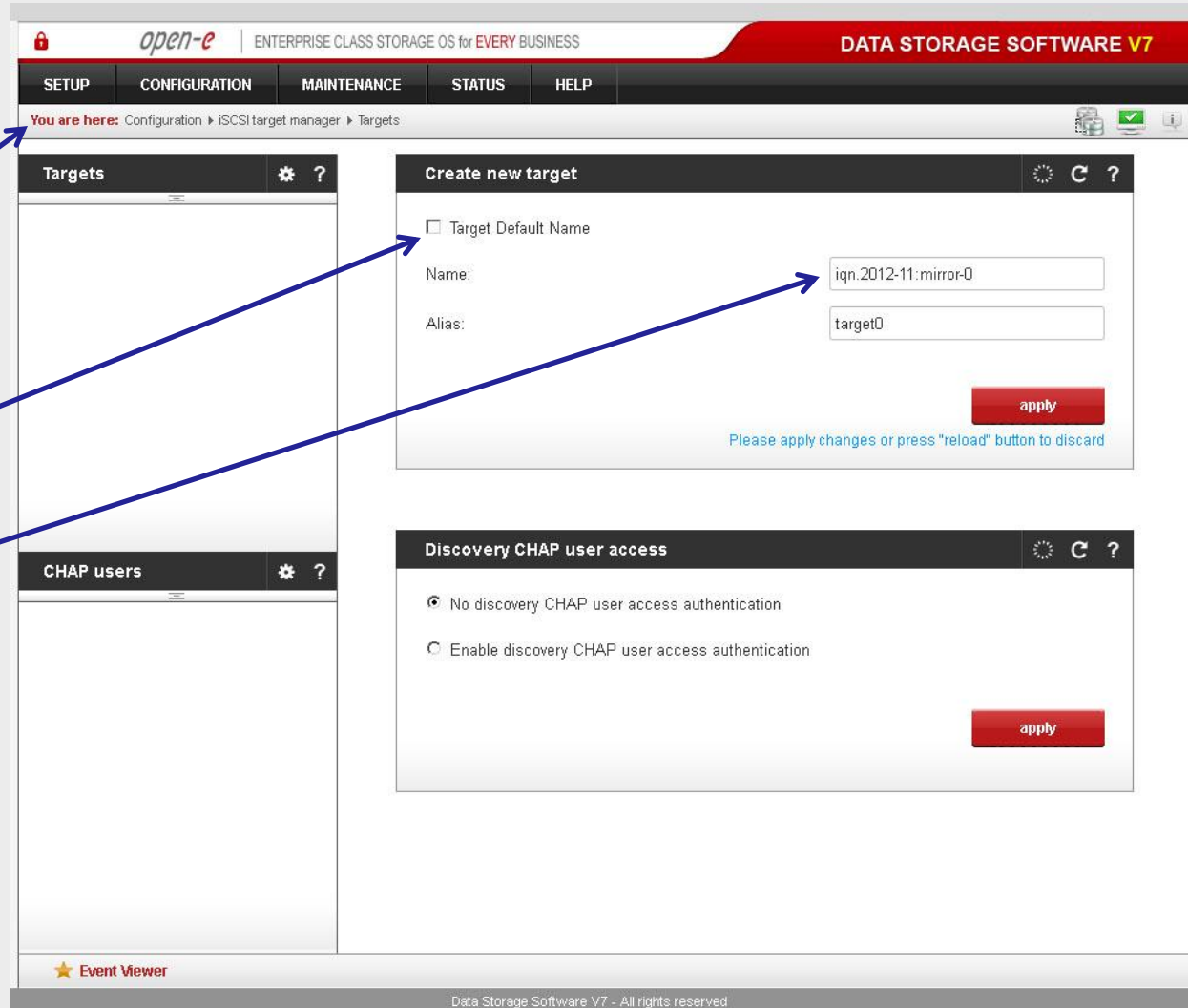
IP Address:192.168.0.220

5. Create new target on the node-a

Next, go to node-a, click on **CONFIGURATION** and choose „iSCSI target manager” → „Targets” from the menu.

Within the „Create new target” function, uncheck the box **Target Default Name**.
In the **Name** field, enter a name for the new target and click **apply** to confirm.

iSCSI targets



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SETUP | CONFIGURATION | MAINTENANCE | STATUS | HELP

You are here: Configuration > iSCSI target manager > Targets

Targets

Create new target

☐ Target Default Name

Name: iqn.2012-11:mirror-0

Alias: target0

apply

Please apply changes or press "reload" button to discard

Discovery CHAP user access

☒ No discovery CHAP user access authentication

☐ Enable discovery CHAP user access authentication

apply

★ Event Viewer

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Data Server (DSS1)

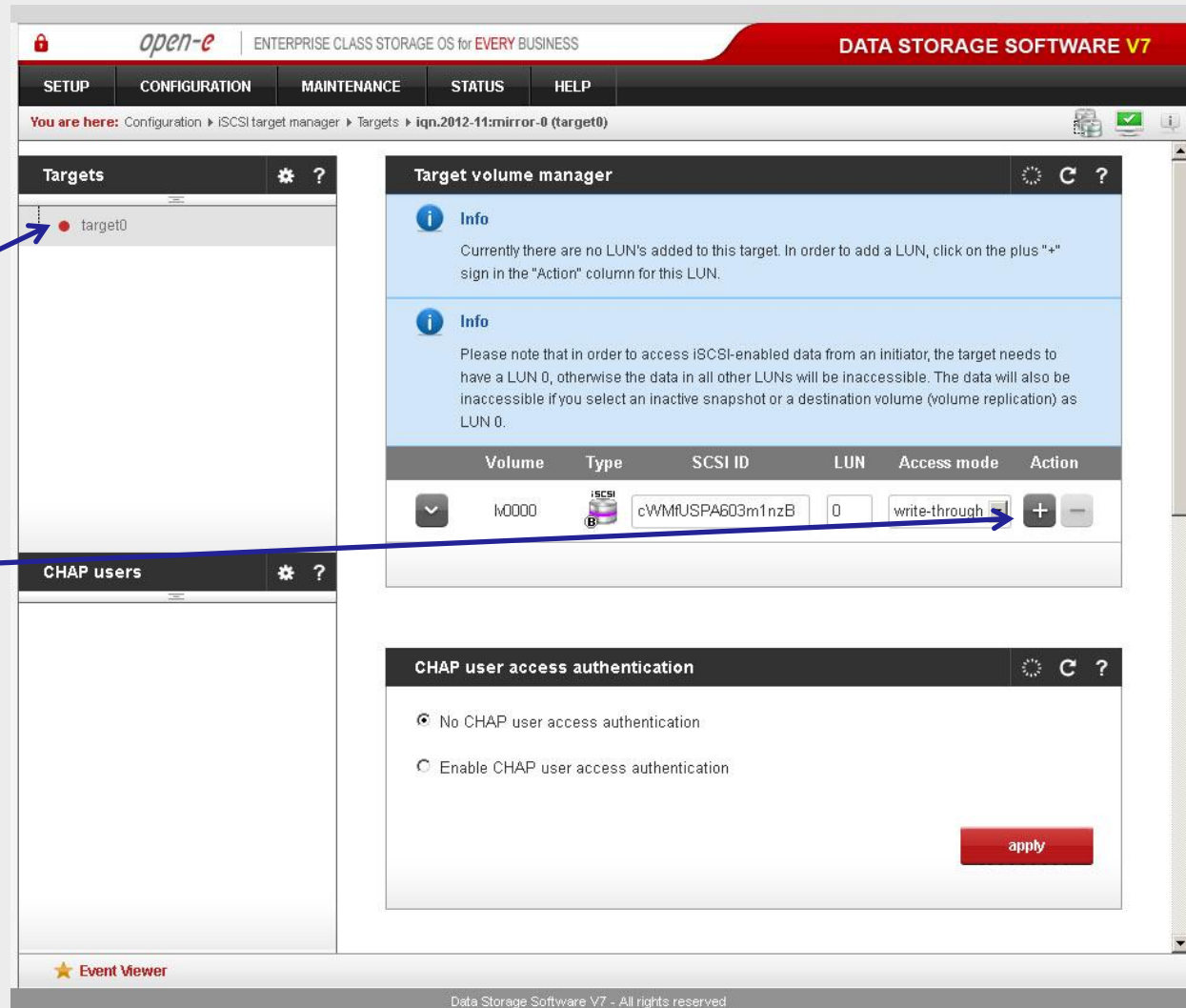
node-a

IP Address:192.168.0.220

5. Create new target on the node-a

After that, select target0 within the Targets field.

To assign appropriate volume to the target (iqn.2012-11:mirror-0 -> lv0000) and click the **+** button located under **Action**.



The screenshot shows the Open-E DSS V7 web interface. The top navigation bar includes links for SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. The breadcrumb trail indicates the current location: Configuration > iSCSI target manager > Targets > iqn.2012-11:mirror-0 (target0).

The main content area is divided into two panels. The left panel, titled "Targets", shows a list of targets with "target0" selected. The right panel, titled "Target volume manager", displays information about the selected target and a table of volumes.

The "Target volume manager" panel includes an "Info" section with instructions on adding LUNs and a table with the following columns: Volume, Type, SCSI ID, LUN, Access mode, and Action.

Volume	Type	SCSI ID	LUN	Access mode	Action
lv0000	iSCSI	cVWMFUSPA603m1nzB	0	write-through	+ -

The "Action" column contains a plus sign (+) button, which is highlighted by a blue arrow from the instruction box. Below the table is a "CHAP user access authentication" section with radio buttons for "No CHAP user access authentication" (selected) and "Enable CHAP user access authentication". An "apply" button is located at the bottom right of this section.

The bottom of the interface features an "Event Viewer" section and a footer with the text "Data Storage Software V7 - All rights reserved".

NOTE:

Before clicking the **+** button again, please copy & paste the SCSI ID and LUN# from the node-b.



Data Server (DSS1)

node-a

IP Address:192.168.0.220

6. Configure Failover

On the node-a go to **Setup** and select „Failover”

In the „Auxiliary paths” function, select the 1st New auxiliary path on the local and remote node and click the **add new auxiliary path** button.

The screenshot shows the Open-E DSS V7 web interface. The top navigation bar includes 'SETUP', 'CONFIGURATION', 'MAINTENANCE', 'STATUS', and 'HELP'. The 'SETUP' tab is active, and the breadcrumb trail shows 'You are here: Setup > Failover'. The main content area displays the 'Auxiliary paths' configuration section. It features a table with columns for 'Status', 'node-a-3... interface (local node)', and 'node-b-5... interface (remote node)'. The table shows one inactive path using 'eth3' on both nodes. Below the table is a 'New auxiliary path' section with dropdown menus for 'Interface on local node' and 'Interface on remote node', both set to 'eth1 (192.168.1.220)'. There are 'cancel' and 'add new auxiliary path' buttons. A message at the bottom of this section says 'Please apply changes or press "reload" button to discard'. Below the 'Auxiliary paths' section is the 'Ping nodes' section, which shows a table with columns for 'Ping node IP address', 'node-a-3... status (local node)', and 'node-b-5... status (remote node)'. The table is empty, with the text 'No ping nodes defined.' and an 'add new ping node' button.

Status	node-a-3... interface (local node)	node-b-5... interface (remote node)
Inactive	eth3 (192.168.3.220)	eth3 (192.168.3.221)

New auxiliary path

Interface on local node: eth1 (192.168.1.220)

Interface on remote node: eth1 (192.168.1.221)

cancel **add new auxiliary path**

Please apply changes or press "reload" button to discard

Ping node IP address	node-a-3... status (local node)	node-b-5... status (remote node)
No ping nodes defined.		

add new ping node



Data Server (DSS1)

node-a

IP Address:192.168.0.220

6. Configure Failover

In the **Auxiliary paths** function, select the 2nd **New auxiliary path** on the local and remote node and click the **add new auxiliary path** button.

The screenshot shows the Open-E DSS V7 web interface. The top navigation bar includes links for SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. The current page is 'Auxiliary paths', which displays a table of existing paths and a section for adding new ones.

Status	node-a-3... interface (local node)	node-b-5... interface (remote node)	
Inactive	eth1 (192.168.1.220)	eth1 (192.168.1.221)	
Inactive	eth3 (192.168.3.220)	eth3 (192.168.3.221)	

New auxiliary path

Interface on local node:

Interface on remote node:

Please apply changes or press "reload" button to discard

Ping nodes

Ping node IP address	node-a-3... status (local node)	node-b-5... status (remote node)
No ping nodes defined.		

★ Event Viewer

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Data Server (DSS1)

node-a

IP Address: 192.168.0.220

6. Configure Failover

In the „Ping nodes” function, enter two ping nodes.
In the IP address field enter IP address and click the **add new ping node** button (according to the configuration in the third slide).
In this example, IP address of the first ping node is: 192.168.1.107 and the second ping node: 192.168.2.107

The screenshot shows the Open-E DSS V7 web interface. The top navigation bar includes 'SETUP', 'CONFIGURATION', 'MAINTENANCE', 'STATUS', and 'HELP'. The 'CONFIGURATION' tab is active, and the 'You are here' path is 'Setup > Failover'. Below this, there is a table showing inactive paths and an 'add new auxiliary path' button. The 'Ping nodes' window is open, displaying a success message: 'Ping node has been added successfully.' Below this, a table lists ping nodes with their IP addresses and status. The 'New ping node' section shows the IP address field filled with '192.168.2.107' and buttons for 'cancel' and 'add new ping node'. A footer note says 'Please apply changes or press "reload" button to discard'.

Ping node IP address	node-a-3... status (local node)	node-b-5... status (remote node)
192.168.1.107	Reachable	Reachable

New ping node

IP address: 192.168.2.107

cancel add new ping node

Please apply changes or press "reload" button to discard



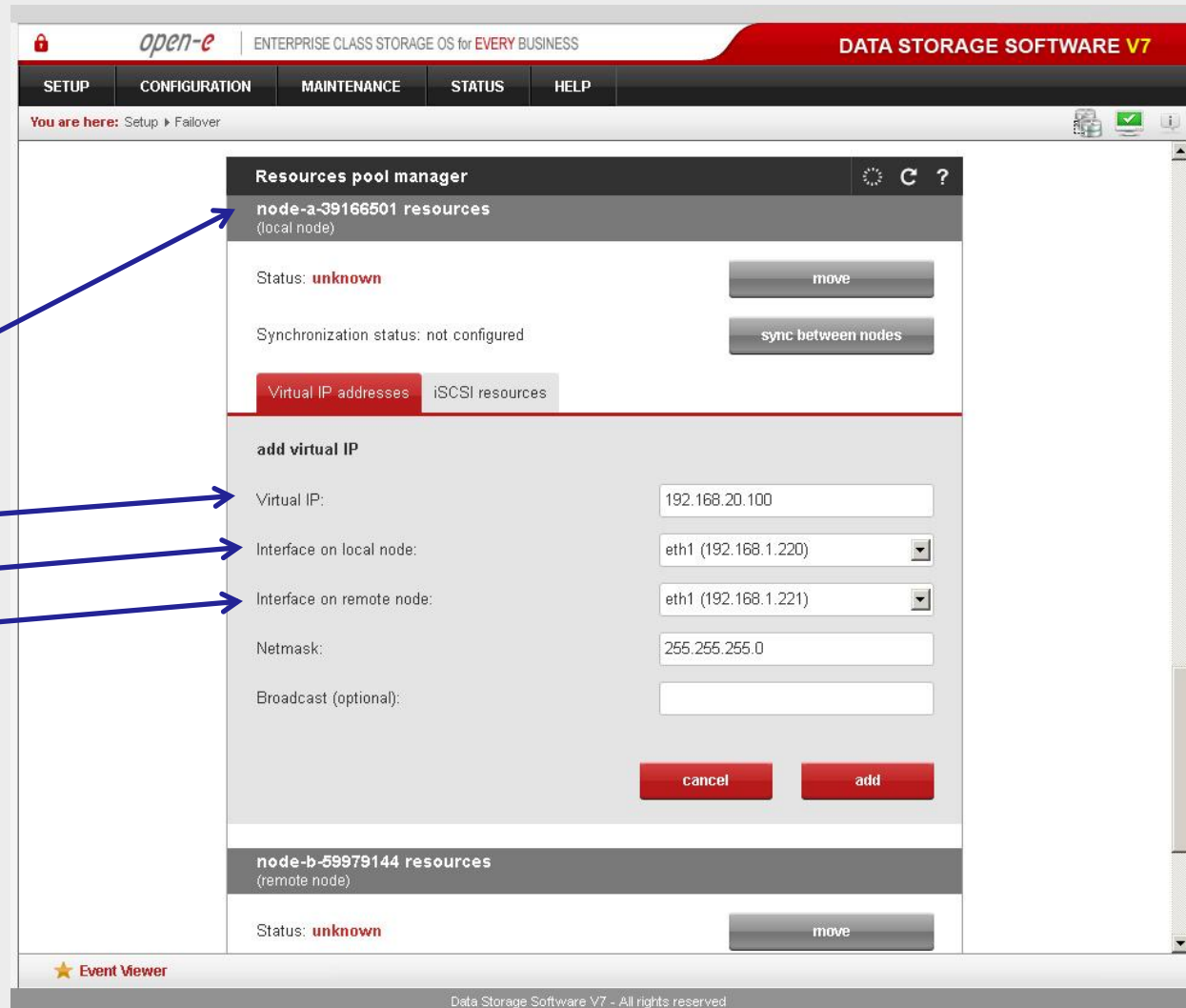
Data Server (DSS1)

node-a

IP Address:192.168.0.220

6. Configure Failover

Next, go to the **Resources Pool Manager** function (on node-a resources) and click the **add virtual IP** button. After that, enter 1st **Virtual IP**, (in this example 192.168.20.100 according to the configuration in the third slide) and select two appropriate interfaces on local and remote nodes. Then, click the **add** button.



The screenshot shows the Open-E DSS V7 web interface. The top navigation bar includes links for SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. The current page is titled "Resources pool manager" and shows the configuration for "node-a-39166501 resources (local node)". The status is "unknown" and the synchronization status is "not configured". There are buttons for "move" and "sync between nodes". The "Virtual IP addresses" tab is selected, showing the "add virtual IP" form. The form includes fields for "Virtual IP:" (192.168.20.100), "Interface on local node:" (eth1 (192.168.1.220)), "Interface on remote node:" (eth1 (192.168.1.221)), "Netmask:" (255.255.255.0), and "Broadcast (optional):". There are "cancel" and "add" buttons at the bottom of the form. Below the form, the configuration for "node-b-59979144 resources (remote node)" is partially visible, showing a status of "unknown" and a "move" button. The bottom of the interface includes an "Event Viewer" icon and a footer with the text "Data Storage Software V7 - All rights reserved".



Data Server (DSS1)

node-a

IP Address:192.168.0.220

6. Configure Failover

Now, still on node-a resources (local node) enter the next Virtual IP address. Click **add virtual IP** enter 2nd **Virtual IP**, (in this example 192.168.21.100), and select two appropriate interfaces on the local and remote nodes. Then, click the **add** button.

Open-E DSS V7 Active-Passive iSCSI Failover

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Data Server (DSS1)

node-a

IP Address:192.168.0.220

6. Configure Failover

Now you have 2 Virtual IP addresses configured on two interfaces.

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SETUP | CONFIGURATION | MAINTENANCE | STATUS | HELP

You are here: Setup > Failover

Resources pool manager

node-a-39166501 resources
(local node)

Info
Virtual IP has been created successfully.

Status: **unknown** move

Synchronization status: not configured sync between nodes

Virtual IP addresses | iSCSI resources

add virtual IP

Virtual IP	Interface on local node:	Interface on remote node:	
192.168.20.100	eth1 (192.168.1.220)	eth1 (192.168.1.221)	⚙️ 🗑️
192.168.21.100	eth2 (192.168.2.220)	eth2 (192.168.2.221)	⚙️ 🗑️

node-b-59979144 resources
(remote node)

Status: **unknown** move

Synchronization status: not configured sync between nodes

Virtual IP addresses | iSCSI resources

★ Event Viewer

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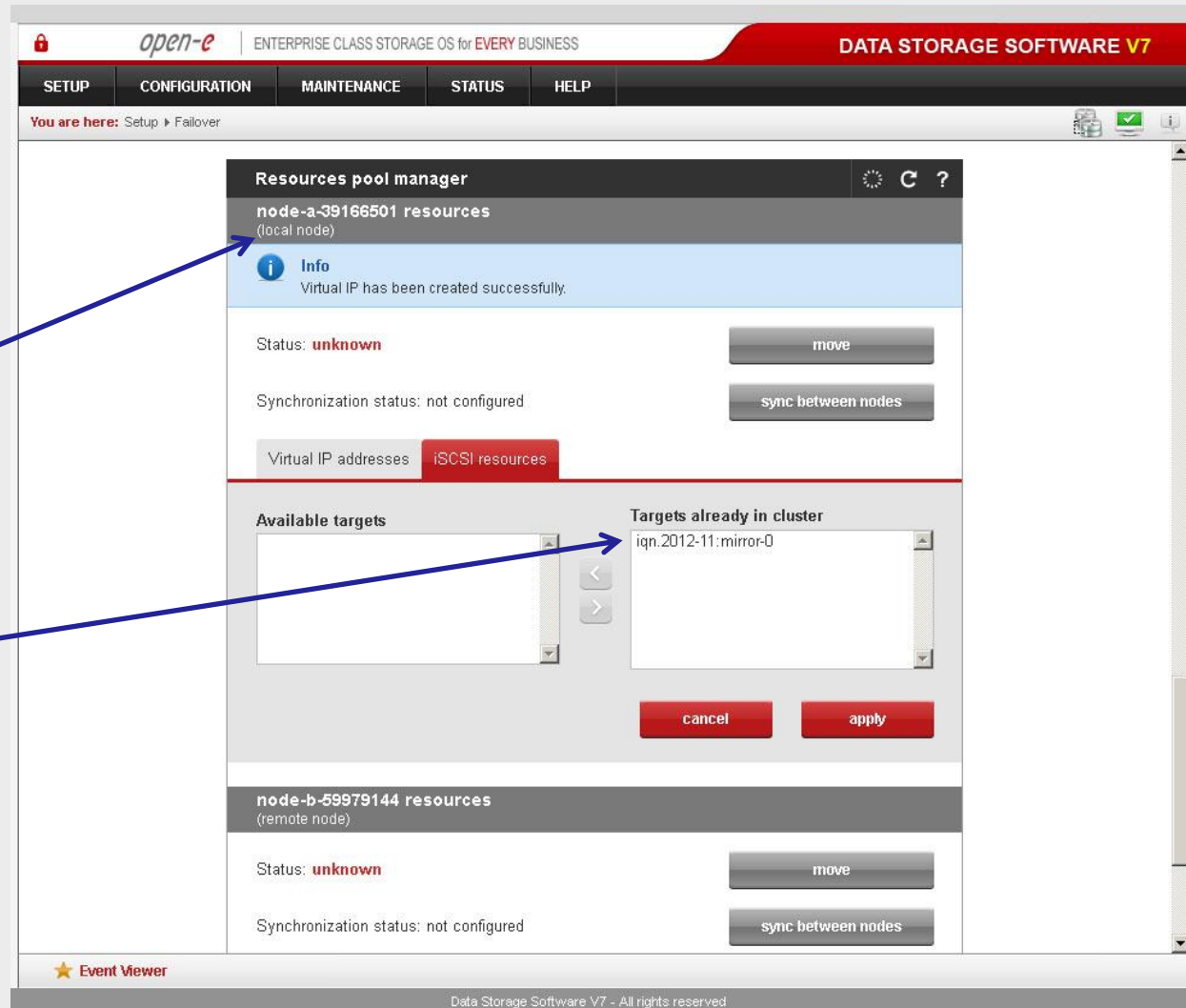
Data Server (DSS1)

node-a

IP Address:192.168.0.220

6. Configure Failover

When you are finished with setting the virtual IP, go to the „iSCSI resources” tab on the local node resources and click the **add or remove targets** button. After moving the target **mirror-0** from „Available targets” to „Targets already in cluster” click the **apply** button.



The screenshot shows the Open-E DSS V7 web interface. The top navigation bar includes 'SETUP', 'CONFIGURATION', 'MAINTENANCE', 'STATUS', and 'HELP'. The current page is 'Setup > Failover'. The main content area is titled 'Resources pool manager' and shows 'node-a-39166501 resources (local node)'. An 'Info' message states 'Virtual IP has been created successfully.' Below this, the 'Status' is 'unknown' and the 'Synchronization status' is 'not configured'. The 'Virtual IP addresses' tab is selected, and the 'iSCSI resources' tab is also visible. The 'Available targets' list is empty, and the 'Targets already in cluster' list contains 'iqn.2012-11:mirror-0'. The 'apply' button is highlighted.



Data Server (DSS1)

node-a

IP Address:192.168.0.220

6. Configure Failover

After that, scroll to the top of the **Failover manager** function.
At this point, both nodes are ready to start the Failover.
In order to run the Failover service, click the **start** button and confirm this action by clicking the **start** button again.

The screenshot displays the Open-E DSS V7 web interface. The top navigation bar includes links for SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. The current page is titled "Failover manager" and shows the "Cluster status" as "Ready for Start". A red "start" button is prominently displayed. Below this, the "Resources pool" section lists two nodes: "node-a-39166501 (local node)" with status "inactive" and replication state "syncd", and "node-b-59979144 (remote node)" with status "not configured" and replication state "not configured". The "Network statuses" section shows "Ping nodes: 2 of 2 reachable" and "Auxiliary paths: 3 defined". The "Remote node status" section shows "Remote node availability: Reachable", "Remote node hostname: node-b-59979144", and "Remote node IP: 192.168.3.221". A "start" button is also present in the "Remote node status" section. The bottom of the interface features an "Event Viewer" and a footer with the text "Data Storage Software V7 - All rights reserved".

Failover manager

Cluster status: Ready for Start

All required settings have been set up, cluster is ready to be started.

start

Resources pool

node-a-39166501 (local node) resources pool:

Status: inactive

Replication state: **syncd**

node-b-59979144 (remote node) resources pool:

Status: not configured

Replication state: not configured

[See details >](#)

Network statuses

Ping nodes: **2 of 2 reachable**

[See details >](#)

Auxiliary paths: 3 defined

[See details >](#)

Remote node status

Remote node availability: **Reachable**

Remote node hostname: **node-b-59979144**

Remote node IP: **192.168.3.221**

[See details >](#)

Auxiliary paths

★ Event Viewer

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NOTE:

If the start button is grayed out, the setup has not been completed.



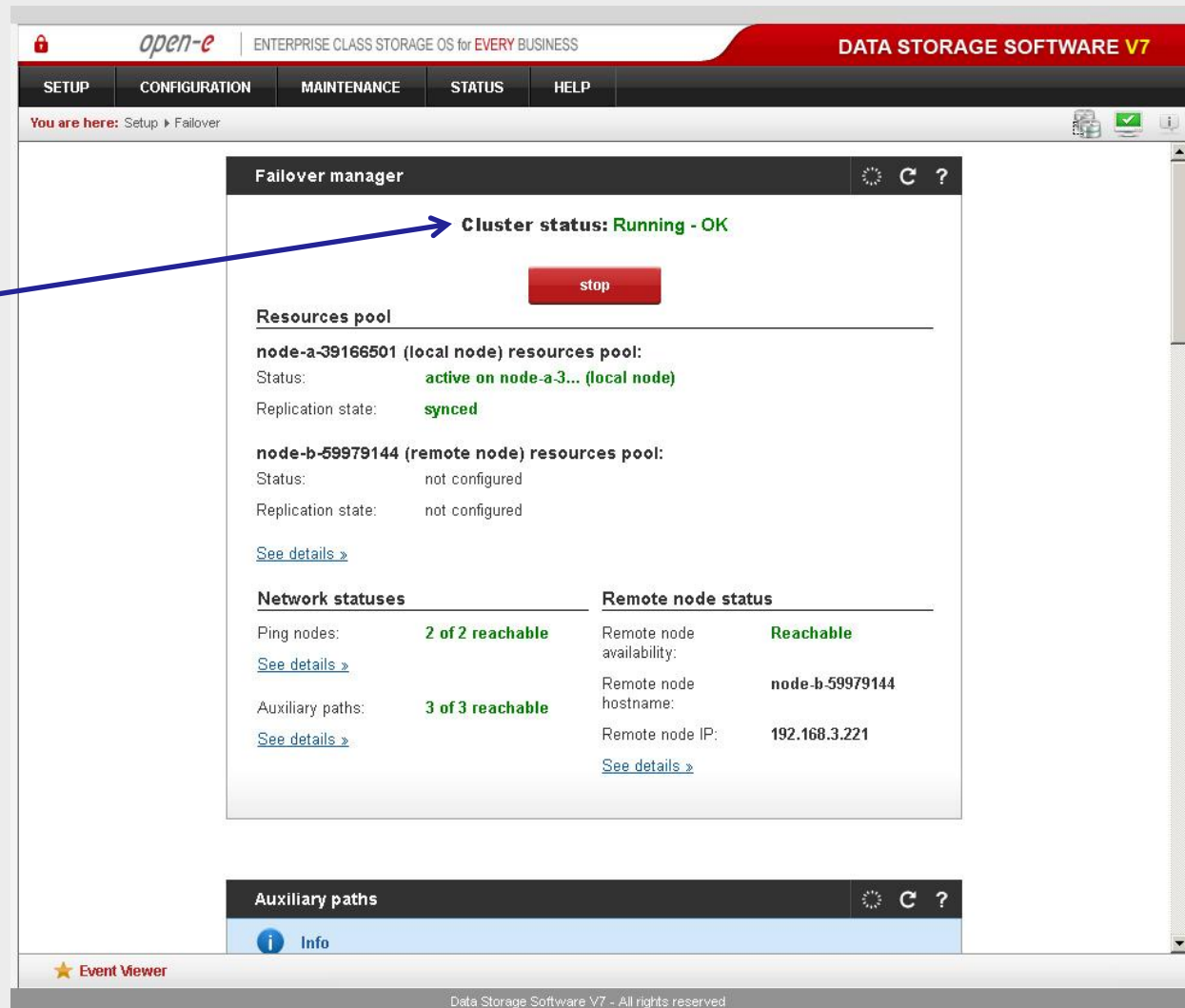
Data Server (DSS1)

node-a

IP Address:192.168.0.220

7. Start Failover Service

After clicking the **start** button, configuration of both nodes is complete.



The screenshot shows the Open-E DSS V7 web interface. The top navigation bar includes links for SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. The current page is 'Setup > Failover'. The main content area is titled 'Failover manager' and displays the following information:

- Cluster status:** Running - OK (indicated by a green arrow from the blue box).
- Resources pool:**
 - node-a-39166501 (local node) resources pool:**
 - Status: active on node-a-3... (local node)
 - Replication state: synced
 - node-b-59979144 (remote node) resources pool:**
 - Status: not configured
 - Replication state: not configured
- Network statuses:**
 - Ping nodes: 2 of 2 reachable
 - Auxiliary paths: 3 of 3 reachable
- Remote node status:**
 - Remote node availability: Reachable
 - Remote node hostname: node-b-59979144
 - Remote node IP: 192.168.3.221

At the bottom of the interface, there is an 'Auxiliary paths' section with an 'Info' button and an 'Event Viewer' section.

NOTE:

You can now connect with iSCSI Initiators. The storage client, in order to connect to target0 please setup multipath with following IP on the initiator side: 192.168.20.100 and 192.168.21.100.



Data Server (DSS1)

node-a

IP Address:192.168.0.220

8. Test Failover Function

In order to test Failover, go to the **Resources pool manager** function. Then, in the **local node** resources, click on the **move to remote node** button and confirm this action by clicking the **move** button.



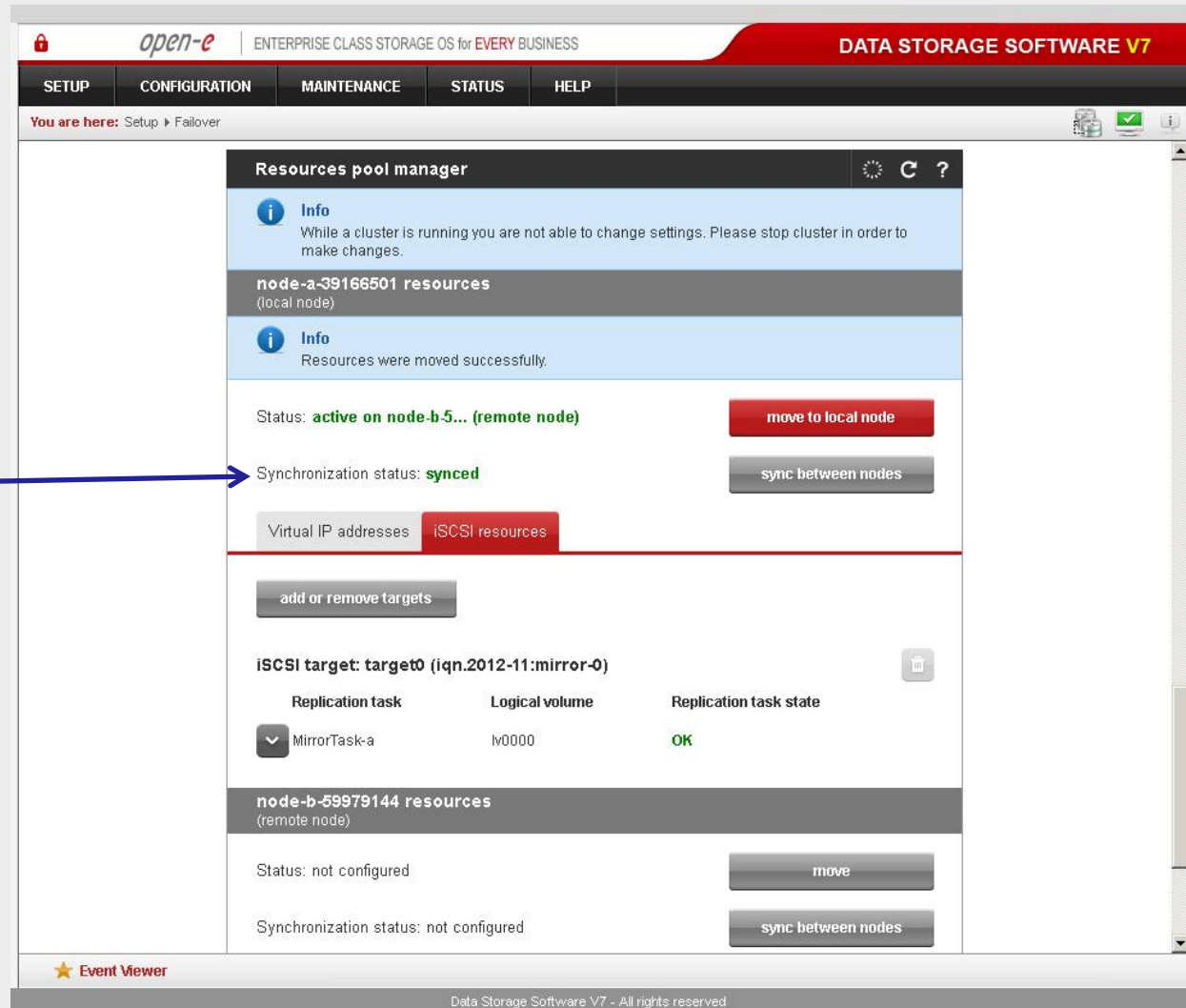
Data Server (DSS1)

node-a

IP Address:192.168.0.220

8. Test Failover Function

After performing this step, the status for **local node** resources should state „active on node-b (remote node)” and the **Synchronization status** should state „synced”.



The screenshot shows the Open-E DSS V7 web interface. The top navigation bar includes links for SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. The main content area is titled "Resources pool manager" and displays information for two nodes: node-a-39166501 (local node) and node-b-59979144 (remote node). The status for local node resources is "active on node-b-5... (remote node)" and the synchronization status is "synced". The interface also shows iSCSI target information and replication task status.

Node	Status	Synchronization status
node-a-39166501 (local node)	active on node-b-5... (remote node)	synced
node-b-59979144 (remote node)	not configured	not configured



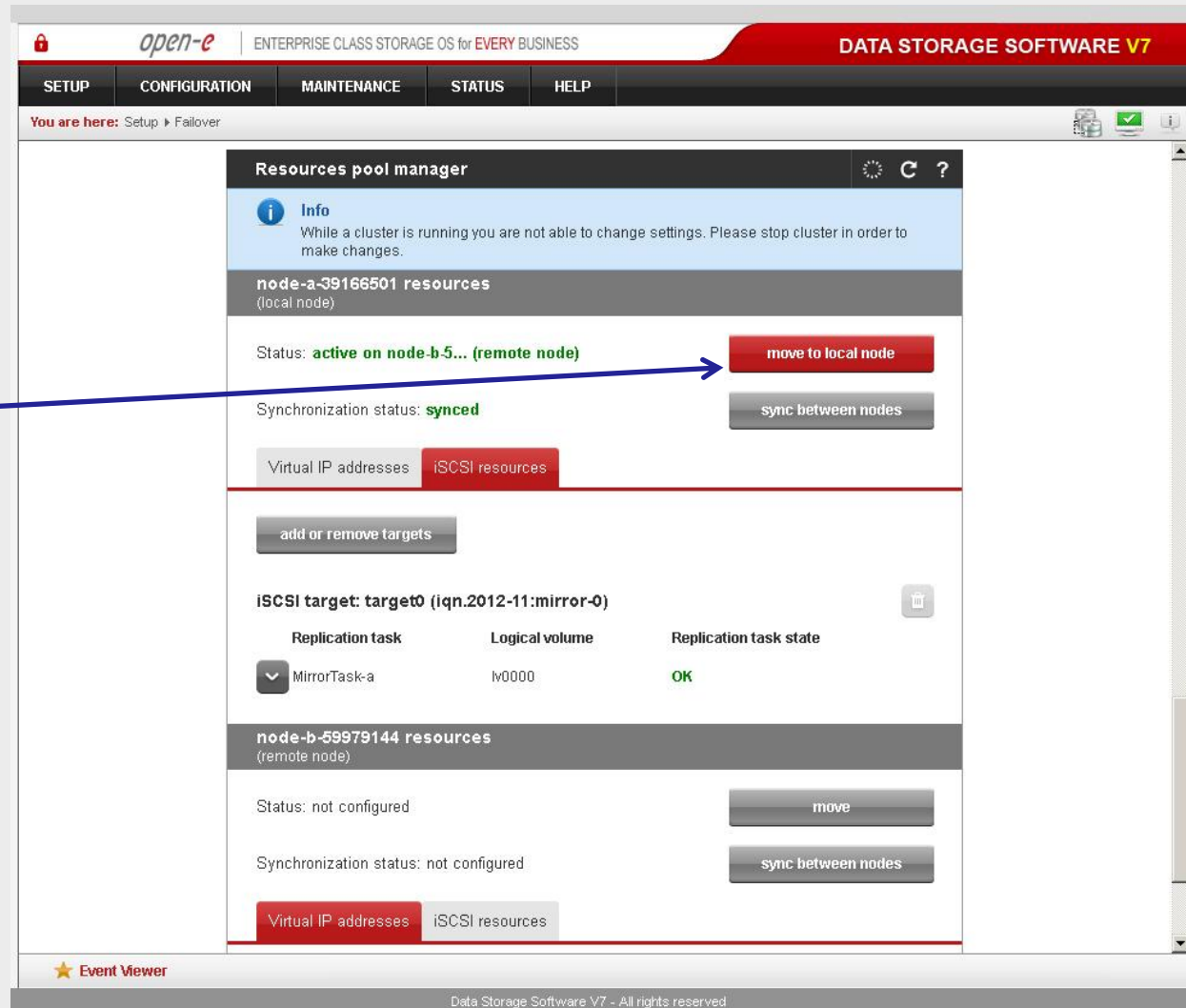
Data Server (DSS1)

node-a

IP Address:192.168.0.220

9. Run Failback Function

In order to test failback, click the **move to local node** button in the **Resources pool manager** box for local node resources and confirm this action by clicking the **move** button.



The screenshot displays the Open-E DSS V7 web interface. The top navigation bar includes links for SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. The main content area is titled "Resources pool manager" and shows the status of resources for two nodes: node-a (local) and node-b (remote). For node-a, the status is "active on node-b-5... (remote node)" and the synchronization status is "synced". A blue arrow points from the text box to the "move to local node" button. Below this, the iSCSI target "target0" is shown with a replication task "MirrorTask-a" in "OK" state. The "move" button for node-b is also visible.



Data Server (DSS1)

node-a

IP Address:192.168.0.220

9. Run Failback Function

After completing this step the status for node-a resources should state „active on node-a” (local node) and the Synchronization status should state: **synced**.

NOTE:

The Active-Passive option allows configuring a resource pool only on one of the nodes. In such a case, all volumes are active on a single node only. The Active-Active option allows configuring resource pools on both nodes and makes it possible to run some active volumes on node-a and other active volumes on node-b. The Active-Active option is enabled with the TRIAL mode for 60 days or when purchasing the Active-Active Failover Feature Pack.

The configuration and testing of Active-Passive iSCSI Failover is now complete.

The screenshot shows the Open-E DSS V7 web interface. The top navigation bar includes links for SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. The main content area is titled 'Resources pool manager' and displays the following information:

- Info:** While a cluster is running you are not able to change settings. Please stop cluster in order to make changes.
- node-a-39166501 resources (local node):**
 - Info:** Resources were moved successfully.
 - Status:** active on node-a-3... (local node)
 - Synchronization status:** synced
 - Buttons:** move to remote node, sync between nodes
- Virtual IP addresses** and **iSCSI resources** tabs.
- add or remove targets** button.
- iSCSI target: target0 (iqn.2012-11:mirror-0)**
 - Replication task:** MirrorTask-a
 - Logical volume:** lv0000
 - Replication task state:** OK
- node-b-59979144 resources (remote node):**
 - Status:** not configured
 - Synchronization status:** not configured
 - Buttons:** move, sync between nodes

The bottom of the interface shows an 'Event Viewer' section and a footer with the text 'Data Storage Software V7 - All rights reserved'.

Thank you!

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